Ribosomal RNA (rRNA) and ribosomal proteins are integral parts of the ribosome complex. Formation of these particles involves extensive synthesis in which rRNA and ribosomal proteins join together to form mature ribosomes.

**RESULTS**

![Figure 2](above): Slot Northern images of Co-IP'ed proteins bound to pre-rRNA, tagged with Oligo probes corresponding to different segments on the rRNA. 1112=Negative control, containing no synthesized protein. Total RNA=Positive control, containing all the ribosomal proteins 30 minutes after induction.

![Figure 3](below): Quantitative graphical representation of Slot Northern results depicted in Figure 2 above. Example of rp L4.

**METHODS**

To investigate the correlation of ribosomal protein binding to maturing rRNA to rRNA cleavage points, we have developed a method to study this correlation in vivo.

**RESULTS**

![Figure 4](above): Letters denote order of cleavage sites of maturing RNA. Numbers denote oligo probe sites corresponding to specific sequences on the transcript. Probes boxed in red show the probes used in this project. Image from “RNase MRP is required for entry of 35S precursor rRNA into the canonical processing pathway”-Lindahl et al.

![Figure 5](below): Image of rRNA maturation process. Stars indicate estimated binding site locations of tested rps. Image from “RNase MRP is required for entry of 35S precursor rRNA into the canonical processing pathway”-Lindahl et al.

**CONCLUSIONS**

- Devised a reliable method for studying ribosomal protein binding to ribosomal RNA during maturation.
- Quantification of qualitative data gives normalized standard for comparing and interpreting ribosomal protein binding Slot Northern signals

**FUTURE DIRECTIONS**

- Focus pool of studied proteins to suspected primary binding proteins
- Perform biological repeats for confirmation

**ACKNOWLEDGEMENTS**

Thank you to:
- Dr. Lindahl
- Lindahl lab
- Jesse Fox
- Howard Hughes Medical Institute
- Meyerhoff Scholars Program

--Supported in part by the Howard Hughes Medical Institute’s Precollege and Undergraduate Science Education Program.--